What is claimed is:

1. A download system including (a) a receiving apparatus for receiving and executing a program and (b) a transmitting apparatus for transmitting the program to the receiving apparatus,

the receiving apparatus comprising:

information generating means for generating receiving apparatus information that indicates a use state of resources held by the receiving apparatus that are necessary for program executions;

request transmitting means for transmitting to the transmitting apparatus a download request which contains (a) an identification of a download-target program and (b) the generated receiving apparatus information; and

program receiving means for receiving a program that is sent from the transmitting apparatus in response to the download request, and

the transmitting apparatus comprising:

program holding means for holding one or more programs and identifications thereof;

resource information holding means for holding one or more pieces of resource information which correspond to the one or more programs on a one-to-one basis and each indicate resources necessary for an execution of a corresponding program;

request receiving means for receiving the download request from the receiving apparatus;

27   judging means for judging, from (a) a piece of resource

28   information corresponding to one of the one or more programs

29   with the identification contained in the download request

30   and (b) the receiving apparatus information contained in

31   the download request, whether the receiving apparatus can

32   execute the program with the identification; and

33   program transmitting means for transmitting to the

34   receiving apparatus the program with the identification

35   when the judging means judges that the receiving apparatus

36   can execute the program.

1   2. A download system including (a) a receiving apparatus

2   for receiving and executing a program and (b) a transmitting

3   apparatus for transmitting the program to the receiving

4   apparatus,

5   the receiving apparatus comprising:

6   information generating means for generating

7   receiving apparatus information that indicates a use state

8   of resources held by the receiving apparatus that are

9   necessary for program executions;

10   request transmitting means for transmitting to the

11   transmitting apparatus a download request which contains

12   (a) an identification of a download-target program and (b)

13   the generated receiving apparatus information; and

14   program receiving means for receiving a program that

15   is sent from the transmitting apparatus in response to the

16   download request, and

17   the transmitting apparatus comprising:

18   program holding means for holding a plurality of

19 programs and identifications thereof, the plurality of

20 programs achieving basically the same function and

21 requiring resources that satisfy different conditions;

22   resource information holding means for holding a

23 plurality of pieces of resource information which .

24 correspond to the plurality of programs on a one-to-one

25 basis and each indicate resources necessary for an execution

26 of a corresponding program;

27   request receiving means for receiving the download

28 request from the receiving apparatus;

29   judging means for judging, from (a) two or more pieces

30 of resource information corresponding to two or more

31 programs that have the identification contained in the

32 download request, among the plurality of programs and (b)

33 the receiving apparatus information contained in the

34 download request, whether the receiving apparatus can

35 execute the two or more programs; and

36   program transmitting means for transmitting to the

37 receiving apparatus a program that the judging means judges

38 the receiving apparatus can execute.

1 3. The download system of Claim 2, wherein

2   when judging that the receiving apparatus can execute

3 any of at least two programs among the two or more programs,

4 the judging means selects one out of the at least two programs,

5   and

6   the program transmitting means transmits the selected

7   program to the receiving apparatus.

1   4. The download system of Claim 2, wherein

2   when the judging means judges that the receiving

3   apparatus can execute any of at least two programs among

4   the two or more programs, the program transmitting means

5   transmits to the receiving apparatus at least two pieces

6   of characteristic information that each indicate

7   characteristics at an execution of a corresponding one of

8   the at least two programs, receives a selection result which

9   is sent from the receiving apparatus in response to the

10   at least two pieces of characteristic information, and

11   transmits a program corresponding to the selection result

12   to the receiving apparatus, and

13   the receiving apparatus further comprising:

14   selection receiving means for presenting to a user

15   the at least two pieces of characteristic information

16   received from the program transmitting means, allowing the

17   user to select one among the at least two pieces of

18   characteristic information, and receiving a selection

19   result from the user; and

20   selection result notifying means for notifying the

21   transmitting apparatus of the selection result.

1   5. A download system including (a) a receiving apparatus

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2 for receiving and executing a program and (b) a transmitting

3 apparatus for transmitting the program to the receiving

4 apparatus,

5   the transmitting apparatus comprising:

6   program holding means for holding one or more programs

7 and identifications thereof;

8   resource data holding means for holding one or more

9 pieces of resource data which correspond to the one or more

10 programs on a one-to-one basis and each define resources

11 necessary for an execution of a corresponding program;

12   request receiving means for receiving either a

13 resource data request or a program request from the receiving

14 apparatus; and

15   transmitting means for either (a) reading from the

16 resource data holding means a piece of resource data

17 corresponding to an identification contained in the

18 received resource data request and transmitting the read

19 piece of resource data to the receiving apparatus, or (b)

20 reading from the program holding means a program

21 corresponding to an identification contained in the

22 received program request, and transmitting the read program

23 to the receiving apparatus, and

24   the receiving apparatus comprising:

25   first request transmitting means for transmitting to

26 the transmitting apparatus the resource data request that

27 contains the identification of a download-target program;

28   resource data receiving means for receiving the piece

29 of resource data sent from the transmitting apparatus in

30 response to the resource data request;

31   judging means for judging from the piece of resource

32 data whether the receiving apparatus can execute the

33 download-target program;

34   second request transmitting means for, when the

35 judging means judges that the receiving apparatus can

36 execute the download-target program, transmitting the

37 program request containing the identification of the

38 download-target program; and

39   program receiving means for receiving a program that

40 is sent from the transmitting apparatus in response to the

41 program request.

1 6. The download system of Claim 5, wherein

2   the one or more pieces of resource data held by the

3 resource data holding means are resource acquisition

4 scripts used for acquiring resources necessary for

5 executions of corresponding programs, and

6   the judging means judges from a result of a provisional

7 execution of a resource acquisition script received from

8 the transmitting apparatus whether the receiving apparatus

9 can execute the download-target program.

1 7. A download system including (a) a receiving apparatus

2 for receiving and executing a program and (b) a transmitting

3 apparatus for transmitting the program to the receiving

4   apparatus,

5   the transmitting apparatus comprising:

6   program holding means for holding one or more programs

7   and identifications thereof;

8   check script holding means for holding one or more

9   check scripts which correspond to the one or more programs

10 and are each used to check whether the receiving apparatus

11 has either of a device function and an embedded-program

12 function that is necessary for an execution of a

13 corresponding program;

14   request receiving means for receiving either a check

15 script request or a program request from the receiving

16 apparatus; and

17   transmitting means for either (a) reading from the

18 check script holding means a check script corresponding

19 to an identification contained in the received check script

20 request and transmitting the read check script to the

21 receiving apparatus, or (b) reading from the program holding

22 means a program corresponding to an identification

23 contained in the received program request, and transmitting

24 the read program to the receiving apparatus, and

25   the receiving apparatus comprising:

26   first request transmitting means for transmitting to

27 the transmitting apparatus the check script request that

28 contains the identification of a download-target program;

29   check script receiving means for receiving the check

30 script sent from the transmitting apparatus in response

31   to the check script request;

32   judging means for judging from a result of an execution

33   of the received check script whether the receiving apparatus

34   can execute the download-target program;

35   second request transmitting means for, when the

36   judging means judges that the receiving apparatus can

37   execute the download-target program, transmitting the

38   program request containing the identification of the

39   download-target program; and

40   program receiving means for receiving a program that

41   is sent from the transmitting apparatus in response to the

42   program request.

1   8. A receiving apparatus for receiving and executing a

2   program in a download system which also includes a

3   transmitting apparatus for transmitting the program to the

4   receiving apparatus, the receiving apparatus comprising:

5   information generating means for generating

6   receiving apparatus information that indicates a use state

7   of resources held by the receiving apparatus that are

8   necessary for program executions;

9   request transmitting means for transmitting to the

10   transmitting apparatus a download request which contains

11   (a) an identification of a download-target program and (b)

12   the generated receiving apparatus information; and

13   program receiving means for receiving a program that

14   is sent from the transmitting apparatus in response to the

15 download request.

1 9. A receiving apparatus for receiving and executing a
2 program in a download system which also includes a
3 transmitting apparatus for transmitting the program to the
4 receiving apparatus, the transmitting apparatus holding
5 a plurality of programs and identifications thereof, the
6 plurality of programs achieving basically the same function
7 and requiring resources that satisfy different conditions,
8 the receiving apparatus comprising:
9   information generating means for generating
10 receiving apparatus information that indicates a use state
11 of resources held by the receiving apparatus that are
12 necessary for program executions;
13   request transmitting means for transmitting to the
14 transmitting apparatus a download request which contains
15 (a) an identification of a download-target program and (b)
16 the generated receiving apparatus information;
17   selection receiving means for presenting to a user
18 a plurality of pieces of characteristic information that
19 are received from the transmitting apparatus and each
20 indicate characteristics at an execution of a corresponding
21 one of a plurality of programs having the identification
22 contained in the download request, allowing the user to
23 select one among the plurality of pieces of characteristic
24 information, and receiving a selection result from the user;
25   selection result notifying means for notifying the

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26 transmitting apparatus of the selection result; and

27   program receiving means for receiving a program that

28 corresponds to the selection result and is sent from the

29 transmitting apparatus.

1 10. A receiving apparatus for receiving and executing a

2 program in a download system which also includes a

3 transmitting apparatus for transmitting the program to the

4 receiving apparatus, the receiving apparatus comprising:

5   first request transmitting means for transmitting to

6 the transmitting apparatus the resource data request that

7 contains the identification of a download-target program;

8   resource data receiving means for receiving the piece

9 of resource data sent from the transmitting apparatus in

10 response to the resource data request;

11   judging means for judging from the piece of resource

12 data whether the receiving apparatus can execute the

13 download-target program;

14   second request transmitting means for, when the

15 judging means judges that the receiving apparatus can

16 execute the download-target program, transmitting the

17 program request containing the identification of the

18 download-target program; and

19   program receiving means for receiving a program that

20 is sent from the transmitting apparatus in response to the

21 program request.

1 11. The receiving apparatus of Claim 10, wherein

2   the piece of resource data received by the resource

3 data receiving means is a resource acquisition script used

4 for acquiring resources necessary for an execution of a

5 corresponding program, and

6   the judging means judges from a result of a provisional

7 execution of the resource acquisition script received from

8 the transmitting apparatus whether the receiving apparatus

9 can execute the download-target program.

1 12. A receiving apparatus for receiving and executing a

2 program in a download system which also includes a

3 transmitting apparatus for transmitting the program to the

4 receiving apparatus, the receiving apparatus comprising:

5   first request transmitting means for transmitting to

6 the transmitting apparatus a check script request that

7 contains an identification of a download-target program;

8   check script receiving means for receiving a check

9 script sent from the transmitting apparatus in response

10 to the check script request;

11   judging means for judging from a result of an execution

12 of the received check script whether the receiving apparatus

13 can execute the download-target program;

14   second request transmitting means for, when the

15 judging means judges that the receiving apparatus can

16 execute the download-target program, transmitting the

17 program request containing the identification of the

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18 download-target program; and

19 program receiving means for receiving a program that

20 is sent from the transmitting apparatus in response to the

21 program request.

1   13. A transmitting apparatus that transmits a program to

2   a receiving apparatus that receives and executes the program,

3   the transmitting apparatus and the receiving apparatus

4   being included in a download system, the transmitting

5   apparatus comprising:

6   program holding means for holding one or more programs

7   and identifications thereof;

8   resource information holding means for holding one

9   or more pieces of resource information which correspond

10 to the one or more programs on a one-to-one basis and each

11 indicate resources necessary for an execution of a

12 corresponding program;

13 request receiving means for receiving a download

14 request from the receiving apparatus;

15 judging means for judging, from (a) a piece of resource

16 information corresponding to one of the one or more programs

17 with an identification contained in the download request

18 and (b) receiving apparatus information contained in the

19 download request, whether the receiving apparatus can

20 execute the program with the identification; and

21 program transmitting means for transmitting to the

22 receiving apparatus the program with the identification

23 when the judging means judges that the receiving apparatus

24 can execute the program.

1 14. A transmitting apparatus that transmits a program to

2 a receiving apparatus that receives and executes the program,

3 the transmitting apparatus and the receiving apparatus

4 being included in a download system, the transmitting

5 apparatus comprising:

6   program holding means for holding a plurality of

7 programs and identifications thereof, the plurality of

8 programs achieving basically the same function and

9 requiring resources that satisfy different conditions;

10   resource information holding means for holding a

11 plurality of pieces of resource information which

12 correspond to the plurality of programs on a one-to-one

13 basis and each indicate resources necessary for an execution

14 of a corresponding program;

15   request receiving means for receiving a download

16 request from the receiving apparatus;

17   judging means for judging, from (a) two or more pieces

18 of resource information corresponding to two or more

19 programs that have an identification contained in the

20 download request, among the plurality of programs and (b)

21 receiving apparatus information contained in the download

22 request, whether the receiving apparatus can execute the

23 two or more programs, and when judging that the receiving

24 apparatus can execute any of at least two programs among

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25 the two or more programs, selecting one out of the at least

26 two programs; and

27   program transmitting means for transmitting the program

28 selected by the judging means to the receiving apparatus.

1   15. A transmitting apparatus that transmits a program to

2   a receiving apparatus that receives and executes the program,

3   the transmitting apparatus and the receiving apparatus

4   being included in a download system, the transmitting

5   apparatus comprising:

6   program holding means for holding one or more programs

7   and identifications thereof;

8   resource data holding means for holding one or more

9   pieces of resource data which correspond to the one or more

10 programs on a one-to-one basis and each define resources

11 necessary for an execution of a corresponding program;

12   request receiving means for receiving either a

13 resource data request or a program request from the receiving

14 apparatus; and

15   transmitting means for either (a) reading from the

16 resource data holding means a piece of resource data

17 corresponding to an identification contained in the

18 received resource data request and transmitting the read

19 piece of resource data to the receiving apparatus, or (b)

20 reading from the program holding means a program

21 corresponding to an identification contained in the

22 received program request, and transmitting the read program

23   to the receiving apparatus.

1   16. The transmitting apparatus of Claim 15, wherein

2   the one or more pieces of resource data held by the

3   resource data holding means are resource acquisition

4   scripts used for acquiring resources necessary for

5   executions of corresponding programs.

1   17. A transmitting apparatus that transmits a program to

2   a receiving apparatus that receives and executes the program,

3   the transmitting apparatus and the receiving apparatus

4   being included in a download system, the transmitting

5   apparatus comprising:

6   program holding means for holding one or more programs

7   and identifications thereof;

8   check script holding means for holding one or more

9   check scripts which correspond to the one or more programs

10   and are each used to check whether the receiving apparatus

11   has either of a device function and an embedded-program

12   function that is necessary for an execution of a

13   corresponding program;

14   request receiving means for receiving either a check

15   script request or a program request from the receiving

16   apparatus; and

17   transmitting means for either (a) reading from the

18   check script holding means a check script corresponding

19   to an identification contained in the received check script

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20 request and transmitting the read check script to the

21 receiving apparatus, or (b) reading from the program holding

22 means a program corresponding to an identification

23 contained in the received program request, and transmitting

24 the read program to the receiving apparatus.